

Message

From: Donovan, Jeffery [jdonovan@spokanecity.org]
Sent: 11/4/2016 8:22:01 PM
To: Navickis-Brasch, Aimee [Aimee.Navickis-Brasch@hdrinc.com]; Heidi Montez [hmontez@landscouncil.org]; Mark Maurer [maurerm@co.thurston.wa.us]; Mike Petersen [mpetersen@landscouncil.org]; Davis, Marcia [mdavis@spokanecity.org]; Greenlund, Doug [dgreenlund@spokanecity.org]; Pearson, Adrianne [apearson@spokanecity.org]; Mullin, Michelle [Mullin.Michelle@epa.gov]; mlascuola@srhd.org; alexander.taylor@wsu.edu; [Ex. 6 Personal Privacy (PP)]; rodenburg@envsci.rutgers.edu; cleary@gonzaga.edu; philip.small@landprofile.com; [Ex. 6 Personal Privacy (PP)]; lahtig@wsdot.wa.gov
Subject: RE: Mycoremediation Experiment- Final Sampling

I agree with Mark that metals concentrations wouldn't change. Even if the fungi are binding up or metabolizing some of the metals, the test wouldn't show this because everything gets broken down with strong acids.

The pesticides and gas-range TPH were all non-detects so it wouldn't be worth repeating these. Diesel-range TPH did have detections so this could potentially be worthwhile (although just the addition of the grain/sawdust might be enough to make these non-detects anyways).

As for the nutrients/pH/volatiles, we didn't measure these in the grain or sawdust, so I'm not sure how much could be said about the changes due to the fungi without knowing initial conditions.

NWTPH—dx runs \$65 a test — so an extra \$1,300 for the 20 samples.

-Jeff

Jeff Donovan
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From: Navickis-Brasch, Aimee [mailto:Aimee.Navickis-Brasch@hdrinc.com]
Sent: Friday, November 04, 2016 11:52 AM
To: Heidi Montez; Mark Maurer; Mike Petersen; Davis, Marcia; Greenlund, Doug; Pearson, Adrianne; Donovan, Jeffery; Mullin.Michelle@epamail.epa.gov; mlascuola@srhd.org; alexander.taylor@wsu.edu; [Ex. 6 Personal Privacy (PP)]; rodenburg@envsci.rutgers.edu; cleary@gonzaga.edu; philip.small@landprofile.com; lahtig@wsdot.wa.gov
Subject: Re: Mycoremediation Experiment- Final Sampling

The baseline analytical testing was conducted on the Vactor Waste samples which included metals, pH, nutrients, volatile solids, pesticides, and oils/grease. These results are located in the dropbox folder under 'Lab Testing\Results Baseline'. If you have trouble accessing the document, please let me know.

As I recall, the baseline testing of these parameters was conducted more for comparability with other vactor waste testing that has been done and to assess if there was anything in the vactor waste (i.e. pesticides) that might influence the fungi growth.

I would agree it would be interesting to know if there has been a change the concentrations of the these parameters however that is outside the questions this research study was investigating. So I am interested to hear what the rest of the group thinks.

Jeff, do you know about how much would it cost to run the additional tests on 20 samples?

Aimee S. Navickis-Brasch, Ph.D. Candidate, P.E.
D (509)343-8515 M (509)995-0557

From: Heidi Montez <hmontez@landscouncil.org>
Sent: Friday, November 4, 2016 11:23 AM
To: Mark Maurer; Mike Petersen; mdavis@spokanecity.org; dgreenlund@spokanecity.org; apearson@spokanecity.org; jdovan@spokanecity.org; Mullin.Michelle@epamail.epa.gov; mlascuola@srhd.org; alexander.taylor@wsu.edu; rodenburg@envsci.rutgers.edu; cleary@gonzaga.edu; philip.small@landprofile.com; lahtig@wsdot.wa.gov; Navickis-Brasch, Aimee
Subject: RE: Mycoremediation Experiment- Final Sampling

Their forms/ bioavailability could potentially change, but I agree that they are the lowest on the list.

Heidi Montez
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From: Mark Maurer [<mailto:maurerm@co.thurston.wa.us>]
Sent: Friday, November 04, 2016 11:03 AM
To: Heidi Montez; Mike Petersen; mdavis@spokanecity.org; dgreenlund@spokanecity.org; apearson@spokanecity.org; jdovan@spokanecity.org; Mullin.Michelle@epamail.epa.gov; mlascuola@srhd.org; alexander.taylor@wsu.edu; rodenburg@envsci.rutgers.edu; cleary@gonzaga.edu; philip.small@landprofile.com; lahtig@wsdot.wa.gov; Navickis-Brasch, Aimee
Subject: RE: Mycoremediation Experiment- Final Sampling

If you have the money to do that it would be good information to have. I do have reservations about doing the analysis for heavy metals though. How would the heavy metal concentration be different before and after treatment? This isn't

like a filter or flow through system where you're putting in some water with a certain concentration of metals and seeing if the effluent is different from the influent.

Mark Maurer, PE, PLA

Thurston County Water Resources

360-754-2968 ~ maurerm@co.thurston.wa.us

360-584-5800 (cell)

"We might say that the earth has the spirit of growth; that its flesh is the soil." - Leonardo da Vinci

From: Heidi Montez [<mailto:hmontez@landscouncil.org>]

Sent: Friday, November 04, 2016 10:45

To: Mike Petersen <mpetersen@landscouncil.org>; mdavis@spokanecity.org; dgreenlund@spokanecity.org; apearson@spokanecity.org; jdonovan@spokanecity.org; Mullin.Michelle@epamail.epa.gov; mlascuola@srhd.org; alexander.taylor@wsu.edu; [Ex. 6 Personal Privacy \(PP\)](#); rodenburg@envsci.rutgers.edu; cleary@gonzaga.edu; philip.small@landprofile.com; Mark Maurer <maurerm@co.thurston.wa.us>; [Ex. 6 Personal Privacy \(PP\)](#); lahtig@wsdot.wa.gov; Navickis-Brasch, Aimee <Aimee.Navickis-Brasch@hdrinc.com>

Subject: Mycoremediation Experiment- Final Sampling

Hello Mycoremediation Team,

As we prepare to take the final samples to send for PCB analysis, I wanted to bring up an important item. I have been thinking about the importance of running the characterization tests (pesticides, petroleum products, heavy metals, etc) on the final samples. It would be very informative to see that data, along with the PCB levels. Obviously the PCB levels are the most important focus of this study, but we also have the chance to see changes in these other pollutants that are affecting the health of the Spokane River. If there are significant reductions of these other pollutants as well, we could have a much stronger case for using this technology in the future.

Please respond with thoughts on this, thank you so much.

Heidi Montez

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From: Donovan, Jeffery [<mailto:jdonovan@spokanecity.org>]

Sent: Wednesday, August 17, 2016 2:12 PM

To: aimee navickis-brasch (aimee@nbswe.com); Heidi Montez; Pearson, Adrienne; Greenlund, Doug; Davis, Marcia

Subject: Fungi Project - Vactor Waste PCB Results

Hi All,

See attached for the PCB results for the Vactor Waste, Hydrated Grain, and Hydrated Sawdust.

Note the results are reported on a dry weight basis.

Let me know if you have any questions. Thanks,

Jeff

Jeff Donovan

Chemist

City of Spokane

Riverside Park Water Reclamation Facility Laboratory

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